U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

APPEAL BRIEF TRANSMITTAL LETTER		Docket Number: 12308/1		
Application Number: 10/031,322	Filing Date: June 21, 2002	Examiner: William L. Miller	Art Unit: 3677	Confirmation No.: 5907
Invention Title: DRIVE BEARING ARRANGEMENT OF ROTATING TOOLS IN PRINTING MACHINES		Inventor(s): Dieter ARABIN		

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By: _____
Thomas C. Hughes (Reg. No. 42,674)

Transmitted herewith is an Appeal Brief and Appendix A, filed in triplicate, for the above-identified application.

Applicant respectfully requests a one-month extension of time in which to respond to the Notice of Appeal filed March 31, 2005, for which a response was due on May 31, 2005. The extended period expires on June 30, 2005. The Commissioner is hereby authorized to charge payment of the one-month extension of time fee of **$120.00** to the deposit account of Kenyon & Kenyon, deposit account number **11-0600.**

The Commissioner is hereby authorized to charge payment of the Appeal Brief fee of **$500.00** due under 37 C.F.R. § 1.192(a) to the deposit account of **Kenyon & Kenyon**, deposit account number **11–0600**.

The Commissioner is also authorized to charge any additional fees in connection with this communication or credit any overpayment to the deposit account of **Kenyon & Kenyon**, deposit account number **11–0600.**

A duplicate copy of this communication is enclosed.

Respectfully submitted,

Dated: June 20, 2005

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Docket No. 12308/1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Dieter ARABIN

Serial No.: 10/031,322

Filing Date: June 21, 2002

For: DRIVE BEARING ARRANGEMENT OF ROTATING TOOLS IN PRINTING MACHINES

Group Art Unit: 3677

Examiner: William Miller

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Date: June 29, 2005

Signature: _____
Thomas C. Hughes (Reg. No. 42,674)

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 1.192(a)

SIR:

In the above-identified patent application ("the present application"), Appellant filed on March 28, 2005, a Notice of Appeal and Request for Extension of Time Pursuant to 37 C.F.R. §1.136(a) from the final rejection of claims 4-7 contained in the Final Office Action issued by the United States Patent and Trademark Office ("the PTO") on November 22, 2004. The Notice of Appeal was received by the PTO on March 31, 2005. Therefore, the period for filing this Appeal Brief expires on May 31, 2005. Appellant files herewith a Petition for One-Month Extension of Time extending the period for filing this Appeal Brief to June 30, 2005.

In accordance with 37 C.F.R. § 1.192(a), this brief is submitted in triplicate in support of the appeal of the final rejection of claims 4-7. For at least the reasons set forth below, it is respectfully submitted that the final rejections of claims 4-7 should be reversed.

1. REAL PARTY IN INTEREST

The real party in interest in the present appeal is Gallus Ferd. Ruesch AG ("Gallus Ferd") of St. Gallen in Switzerland. Gallus Ferd is the assignee of the entire right, title and interest in the present application.

2. RELATED APPEALS AND INTERFERENCES

There are no interferences or other appeals related to the present application "which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal."

3. STATUS OF CLAIMS

Claims 4-7 are pending in the present.

Claims 1-3 were previously cancelled.

Claims 4-7 were finally rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,137,495 ("Luebke").

Appellant appeals from the final rejection of claims 4-7.

A copy of the appealed claims is attached hereto as Appendix A.

4. STATUS OF AMENDMENTS

A Final Office Action was issued in this application on November 22, 2004. The Final Office Action made final the rejections to claims 4-7.

In response to the Final Office Action, a Reply Under 37 C.F.R. § 1.116 was filed in the PTO on January 24, 2005. An Advisory Action was mailed on March 1, 2005. The Advisory Action refused entry of Appellant's Reply Under 37 C.F.R. §1.116.

5. SUMMARY OF THE INVENTION

The present invention relates to a drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor. According to one embodiment, the present invention provides a drive bearing arrangement between a rotating tool and a drive shaft which can be disconnected relatively quickly and improve the precision of the bearing in comparison with conventional solutions. Specification at page 1, line 33 to page 2, line 3. Fig. 1 illustrates a printing machine. Specification at page 3, lines 5 to 6. The printing machine includes a web reeling off unit 1, a conditioning unit 2, which may include a screen printing device 3, a printing device 4, a plurality of further printing units 5 - 9, a flex printing device 10 with a drying device 11, a supply part 12, a processing part 13 with punching device 14, reeling unit 15 and cutting unit 16, as well as a reeling unit 7 used for storage. Specification at page 3, lines 7 to 14.

Fig. 2 illustrates a rotating tool 18 releasably but firmly coupled via an element 19 having an axial projecting connecting cone 20 to the drive shaft 21 of a servomotor 22.

Specification at page 3, lines 20 to 23. The other end of the tool 18 is held in a known manner in a bearing, e.g., a needle bearing located in a detachable flange of a frame. Specification at page 3, lines 23 to 26. The servomotor 22 is also mounted to a flange 23 of the base frame of the unit. Specification at page 3, lines 26 to 27.

The tools, e.g., form cylinder, counter pressure cylinder, coloring apparatus, extend or pivot away from the frame flanges. Specification at page 3, line 35 to page 4, line 2. Each tool is provided with a connecting cone 20 and is inserted into a cone shaped recesses 24 of the drive shafts 21 and precisely centered therein. Specification at page 4, lines 2 to 5. In order to have the tool sitting with the correct angular position on drive shaft 21, a pin 25 is employed to anchor the coupling cone 20. Specification at page 4, lines 5 to 7. The coupling occurs by frictional engagement between the surfaces of the cone 20 and the cone shaped recess 24 in that the coupling cone 20 is tightened by means of a tightening rod 26 (26') against the drive shaft 21. Specification at page 4, lines 9 to 12, emphasis added.

The tightening rod 26 engages a central undercut bore 27 of the cone 20 where a spreading head is located which can be extended to such an extent that the cone 20 is tightened. Specification at page 4, lines 15 to 18. In order to release the drive connection or the drive bearing, the tightening rod 26 (with spreading head 28) is released. Specification at page 4, lines 19 to 21.

6. ISSUES

A. Whether claims 4- 7 are anticipated under 35 U.S.C. § 102(b) by Luebke.

7. GROUPING OF CLAIMS

For purposes of this appeal, all claims stand or fall together.

8. ARGUMENTS

A. The Rejection of Claims 4-7 Under 35 U.S.C. §102(b) as Unpatentable Over Luebke Should Be Reversed

Claims 4 to 7 stand finally rejected under 35 U.S.C. §102(b) as unpatentable over Luebke. It is respectfully submitted that Luebke does not anticipate claims 4 to 7 for at least the following reasons.

Claims 4 and 7 are the only currently-pending independent claims. Claim 4 relates to a drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor. Claim 4 recites that the drive bearing includes an element located at an interface between the rotating tool and the drive shaft on a tool axis. Claim 4 recites that the element has an axially projecting coupling cone that engages a counter recess of the drive shaft. Claim 4 also recites that the cone is releasably held in the recess by frictional

engagement of the surface of the cone with the surface of the recess. Claim 4 also recites that an angular position of the element is adjustable, and that the element is centered and configured to be secured to prevent rotation.

Claim 7 relates to a drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor. Claim 7 recites that the drive bearing includes an element located at an interface between the rotating tool and the drive shaft on a tool axis. Claim 7 recites that the element has an axially projecting coupling cone that engages a counter recess of the drive shaft. Claim 7 also recites that the drive bearing includes the cone tapering down in the direction towards the drive shaft and being releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess. Claim 7 also recites that the drive bearing includes an undercut on an inner bore of the coupling cone of the element. In addition, claim 7 recites that the drive bearing includes a tensioning rod having a spreading head, the rod configured to extend through the drive shaft of the servomotor so that the cone frictionally engages the counter recess in the drive shaft so as to provide a releasable holding of the coupling cone. Furthermore, claim 7 recites that an angular position of the element is adjustable, the element being centered and configured to be secured to prevent rotation.

Luebke purports to relate to a shaft coupling allowing for an offset of axes, that comprises radially displaceable members and preferably serves to couple a journal of a printing cylinder to a drive shaft and comprises positively interengaging coupling parts, which are connected to the respective shafts to be coupled, and an assembly for forcing the coupling parts against each other. Abstract. Luebke states that a radially displaceable outer coupling disk of the shaft coupling is connected to a member which is formed with a central bore, an axially displaceable bolt extends into and is centered in the bore and when the shaft coupling is disengaged the bolt will be urged by a spring into a central bore or aperture of the drive shaft or of a member which is connected to the drive shaft. Abstract.

With respect to claim 4, the Final Office Action states that "Luebke discloses a drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor compromising an element 4 located at an interface between the rotating tool 1 and the drive shaft 16 on a tool axis, the element having an axially projecting coupling cone 6 that engages a counter recess of the drive shaft, the cone being releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess, wherein an angular position of the element is adjustable, and wherein the element is centered and configured to be secured to prevent rotation." Final Office Action at page 2.

In addition, the Final Office Action states that, with respect to claim 7, "Luebke discloses a drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor comprising an element 4 located at an interface between the rotating tool 1 and the drive shaft 16 on a tool axis, the element having an axially projecting coupling

cone 6 that engages a counter recess of the drive shaft, the cone tapering down in the direction toward the drive shaft and being releasable held in the recess by frictional engagement of the surface of the cone with the surface of the recess, an undercut, labeled as U in the figure included in the previous Office action, on an inner bore of the coupling cone of the element, and a tensioning rod 8 having a spreading head 9, the rod configured to extend through the drive shaft so that the cone frictionally engages the counter recess in the drive shaft so as to provide a releasable holding of the coupling cone, wherein an angular position of the element is adjustable, and wherein the element is centered and configured to be secured to prevent rotation." Final Office Action at page 3.

Applicant respectfully maintains that claims 4 and 7 are not anticipated by Luebke for at least the reason that Luebke does not disclose or even suggest all of the limitations recited in claims 4 and 7. For example, Luebke does not disclose or even suggest an element having an axially projecting coupling cone that engages a counter recess of the drive shaft and that is releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess, as recited in claim 4. Furthermore, Luebke does not disclose or even suggest an element having an axially projecting coupling cone that engages a counter recess of the drive shaft, the cone tapering down in the direction towards the drive shaft and being releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess, as recited in claim 7. The Specification states at page 4, lines 2 to 5 that "[e]ach tool is provided with connecting cone 20 and is inserted into cone shaped recesses 24 of drive shafts 21 and precisely centered therein." The Specification further states at page 4, lines 9 to 11 that "[t]he coupling occurs by frictional engagement between the surfaces of cone 20 and cone shaped recess 24 ...".

Luebke describes "[a] coupling part 4 ... compris[ing] a coupling extension 6, which is trapezoidal in cross-section." Column 3, lines 5 to 8, emphasis added. Thus, as an initial matter, the coupling extension 6, which the Examiner identifies as being a coupling cone, is in fact not conical but trapezoidal. The Final Office Action states at page 3, that "[t]he examiner agrees element 6 is disclosed as being trapezoidal in cross-section as shown in Fig. 4, however the cross section of element 6 shown in Fig. 1 clearly defines a cone [and that a] cone is not required to be circular." However, the term "trapezoid" is defined generally as "a quadrilateral having two parallel sides." American Heritage Dictionary of the English Language, Fourth Edition (2000). This is entirely consistent with the shape of the coupling extension shown in Figure 1. There is no disclosure or suggestion in Luebke whatsoever that the coupling extension 6 may be or have the shape of "a cone." Thus, contrary to the Examiner's contention, the coupling extension 6 is not a coupling cone.

Furthermore, Luebke describes that "[the coupling extension 6] is succeeded by a cylindrical guide pin 7 [having] a cylindrical extension 8, which is provided at its free end with an outwardly protruding flange 9." Luebke also describes that "the spring 22

always urges the rod 23 in the direction which is indicated by the arrow A so that the drawhead 24 which is connected to the left-hand end of the rod 23, by means of the gripping jaws 25 firmly pulls the coupling part 4 against the receiving head 10."

First, Luebke does not disclose or even suggest a frictional engagement of the coupling extension 6 with the receiving head 10. The Final Office Action states at page 4 that "the surface of element 6 (cone) and the surface of the recess are in direct contact and the inherent frictional force therebetween also functions to hold element 6 (cone) in the recess." The Examiner impermissibly attributes a characteristic, e.g., friction, to the coupling extension 6 and the tapering recess of the receiving head 10, without providing any evidentiary support in the disclosure of Luebke that such friction exists.

Furthermore, Luebke expressly discloses that it is the interaction of the spring 22, the outwardly protruding flange 9 and the gripping jaws 25, and not any frictional engagement of the coupling extensions 6 and the tapering recess of the receiving head 10, that holds the coupling extension 6 in position relative to the tapering recess of the receiving head 10. More specifically, it is the gripping action of the gripping jaws 25 on the outwardly protruding flange 9, combined with "the spring 22 always urging the rod 23 in the direction [of] arrow A" , that holds the coupling extension 6 in position relative to the tapering recess of the receiving head 10. Thus, Luebke does not disclose or even suggest that the coupling extension 6 is releasably held in the recess of the receiving head 10 by frictional engagement of the surface of the cone with the surface of the recess, but instead describes that "the coupling part 4 [is pulled] against the receiving head 10" by the above-described gripping and spring actions of the other components. The Final Office Action states at page 3-4 that "[t]he examiner agrees the spring 22, flange 9, and jaws 25 hold element 6 (cone) in the recess, however the surface of element 6 (cone) and the surface of the recess are in direct contact and the inherent frictional force therebetween also functions to hold element 6 (cone) in the recess." Again, the Examiner impermissibly attributes a characteristic, e.g., a specific amount of friction, to the coupling extension 6 and the tapering recess of the receiving head 10, without providing any evidentiary support in the disclosure of Luebke that such a specific amount of friction exists. Even if there existed some disclosure or suggestion in Luebke that the coupling extension 6 and the tapering recess of the receiving head 10 are frictionally engaged with each other – which as set forth above, there is no such disclosure or suggestion – the Examiner impermissibly attributes to such frictional engagement the releasably holding of the coupling extension 6 in the recess of the receiving head 10. To the extent that the coupling extension 6 is in any way held in the recess of the receiving head 10, such holding is described as being accomplished solely by the interaction of the spring 22, the outwardly protruding flange 9 and the gripping jaws 25, and not by any frictional engagement of the coupling extensions 6 and the tapering recess of the receiving head 10.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that Luebke does not disclose, or even suggest, an element having an axially projecting coupling cone that engages a counter recess of the drive shaft and that is releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess as recited in claim 4, nor an element having an axially projecting coupling cone that engages a counter recess of the drive shaft, the cone tapering down in the direction towards the drive shaft and being releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess as recited in claim 7. It is therefore respectfully submitted that Luebke does not anticipate claims 4 and 7.

In summary, it is respectfully submitted that Luebke does not anticipate claims 4 and 7, and reversal of these rejections are respectfully requested.

As for claims 5 and 6, which depend from claim 4 and therefore include all of the limitations of claim 4, it is respectfully submitted that Luebke does not anticipate these dependent claims for at least the same reasons given above in support of the patentability of claim 4, and reversal of this rejection is respectfully requested also.

9. CONCLUSION

In view of the foregoing, it is respectfully submitted that Luebke does not anticipate claims 4-7.

Reversal of the final rejections of claims 4-7 is therefore respectfully requested.

Respectfully submitted,

Dated: June 20, 2005

By: _____

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Appendix A

1 to 3 (Cancelled).

4. A drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor, the drive bearing comprising:

an element located at an interface between the rotating tool and the drive shaft on a tool axis,

the element having an axially projecting coupling cone that engages a counter recess of the drive shaft, the cone being releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess,

wherein an angular position of the element is adjustable, and wherein the element is centered and configured to be secured to prevent rotation.

5. The drive bearing according to claim 4 further comprising:

an undercut on an inner bore of the coupling cone of the element; and

a tensioning rod having a spreading head, the rod configured to extend through the drive shaft of the servomotor so that the cone frictionally engages the counter recess in the drive shaft so as to provide a releasable holding of the coupling cone.

6. The drive bearing according to claim 5, wherein the drive shaft includes channels for delivering a pressurized medium to detach the cone, released from the tightening rod, from the counter recess in the drive shaft.

7. A drive bearing for printing machines for coupling a rotating tool to a drive shaft of a servomotor, the drive bearing comprising:

an element located at an interface between the rotating tool and the drive shaft on a tool axis;

the element having an axially projecting coupling cone that engages a counter recess of the drive shaft, the cone tapering down in the direction towards the drive shaft and being releasably held in the recess by frictional engagement of the surface of the cone with the surface of the recess;

an undercut on an inner bore of the coupling cone of the element; and

a tensioning rod having a spreading head, the rod configured to extend through the drive shaft of the servomotor so that the cone frictionally engages the counter recess in the drive shaft so as to provide a releasable holding of the coupling cone,

wherein an angular position of the element is adjustable, and wherein the element is centered and configured to be secured to prevent rotation.